MONTHLY WEATHER REVIEW.

(GENERAL WEATHER SERVICE OF THE UNITED STATES.)

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WAR DEPARTMENT,

OFFICE OF THE CHIEF SIGNAL OFFICER,

DIVISION OF TELEGRAMS AND REPORTS FOR THE BENEFIT OF COMMERCE AND AGRICULTURE.

INTRODUCTION.

In preparing this REVIEW the following data, received up to February 20th, have been used, viz: the regular tri-daily weather charts, containing the data of simultaneous observations taken at 135 Signal Service stations and 13 Canadian stations, as telegraphed to this office; 164 monthly journals and 165 monthly means from the former, and 13 monthly means from the latter; 216 monthly registers from Voluntary Observers; 60 monthly registers from United States Army Post Surgeons; Marine Records; International Simultaneous Observations; Marine Reports through the co-operation of the New York Herald Weather Service; abstracts of Ships' Logs, furnished by the publishers of the New York Maritime Register; monthly reports from the local Weather Services of Iowa, Nebraska and Missouri, and of the Central Pacific Railway Company; reliable newspaper extracts; special reports.

BAROMETRIC PRESSURE.

To illustrate the subject of the distribution of mean atmospheric pressure over the United States and Canada for the month of January, 1882, chart No. II has been prepared, upon which are traced the lines of equal barometric mean values. The areas of lowest mean pressure embrace the Lake Superior region and the Canadian Maritime Provinces, lowest barometers at Charlottetown, P. E. I., and Marquette, 29.92 and 30.04 respectively. In the extreme southern portion of the South Pacific Coast Region the barometric mean falls to 30.03; elsewhere throughout the entire country the mean pressure ranges from 30.07 to 30.23 The two principal areas of high pressure embrace the South Atlantic States and the Middle Plateau Region, highest barometers, 30.23, at Augusta and Charleston, and 30.21 at Pioche, Salt Lake City and Eagle Rock. By comparison with the previous month, it will be noticed that the areas of maximum pressure occupy about the same regions, the western area decreasing in extent and pressure, while that to the eastward increased in extent but diminished slightly in pressure. The low area which occupied northern Minnesota and Dakota in December last, moved gradually eastward into northern Canada, but the change was not sufficient to restore the natural condition in the former State, as at St. Vincent the barometric mean value still remained 0.06 inch below the normal.

Departures from the Normal Values for the Month.—Compared with the means of previous years, the mean pressure for the present month shows (with the exception of scattering stations) very small changes. The distribution of excess and deficiency is evenly balanced in the *number* of separate areas but not in the *extent* embraced by each. For the most part, the pressure is below the normal for the month. The larger area of excess embraces the central portion of the Lake Region and thence southeastward to the Atlantic coast, the departures ranging from 0.01 to 0.1 inch, being mostly however, from 0.02 to 0.05 inch. The second area of excess includes the Middle and Northern Pacific Coast and Northern Plateau Regions, where the departures range from 0.02 inch at Sacramento to 0.14 inch at Portland and Olympia. The most extensive area of deficiency, including the Eastern Gulf States and South Pacific Coast Region, embraces the entire country west of the Mississippi and east of the 112th meridian, the departures ranging from 0.01 to 0.1 inch. The second and smaller area of deficiency comprises the eastern portion of the Lower Lake Region, and New England north of Connecticut, departures ranging from 0.01 to 0.04 inch. Stations reporting a normal condition are as follows: Marquette, New Haven, New London, Pioche and Smithville.

Barometric Ranges.—The range of pressure for the present month has generally varied from 0.75 to 1.35 inches, and in the extremes from 0.43 inch at Key West to 1.7 inches at Barnegat. The ranges increase with the latitude throughout the entire country, and along the southern boundary of the United States, from Florida to California. Throughout the various districts the monthly barometric ranges varied as follows: New England, from 1.14 inches on Mt. Washington to 1.56 inches at Eastport and 1.63 inches at Newport; Middle Atlantic States, 1.31 inches at Lynchburg to 1.47 inches at Albany and 1.7 inches at Barnegat; South Atlantic States, 0.79 inch at Jacksonville to 1.36 inches at Kittyhawk; Florida Peninsula, 0.43 inch at Key West to 0.66 inch at Cedar Keys; Eastern Gulf States, 0.68 inch at Pensacola to 0.78 inch at Montgomery and Vicksburg; Western Gulf States, 0.63 inch at Indianola and Galveston to 0.83 inch at Little Rock and 1.03 inches at Fort Gibson; Rio Grande Valley, 0.54 inch at Brownsville to 0.65 inch at Castroville and 0.7 inch at Rio Grande; Ohio Valley and Tennessee, 0.9 inch at Memphis to 1.02 inches at Cincinnati and 1.3 inches at Pittsburg; Lower Lake Region, 1.12 inches at Detroit and Cleveland to 1.45 inches at Oswego; Upper Lake Region, 1.17 inches at Marquette to 1.25 inches at Chicago and 1.47 inches at Alpena; Upper Mississippi Valley, 1.00 inch at Cairo to 1.21 inches at Des Moines and 1.37 inches at Madison; Missouri Valley, 0.97 inch at Springfield, Mo., to 1.11 inches at Yankton and 1.17 inches at Leavenworth and Huron; Extreme Northwest, 1.17 inches at Fort Buford to 1.21 inches at Bismarck and 1.55 inches at St. Vincent; Northern Slope, 0.76 inch at Cheyenne to 1.00 inch at Fort Custer and 1.02 inches at Forts Assinnaboine and Benton; Middle Slope, 0.67 inch on Pike's Peak to 1.03 inches at Dodge City; Southern Slope, 0.56 inch at McKavett to 0.59 inch at Fort Davis and 0.98 inch at Fort Griffin; Northern Plateau, 0.74 inch at Eagle Rock to 1.00 inch at Spokane and 1.25 inches at Umatilla; Middle Plateau, 0.69 inch at Pioche to 0.79 inch at Winnemucca and 0.8 inch at Salt Lake City; Southern Plateau, 0.42 inch at Fort Grant to 0.53 inch at Prescott and 0.68 inch at Santa